**BEFORE**
**THE PUBLIC SERVICE COMMISSION OF**
**SOUTH CAROLINA**

**DOCKET NO. 2019-365-E**

| | | |
|---|---|---|
| In the Matter of:<br><br>Exploration of a South Carolina Competitive Procurement Program for the Competitive Procurement of Energy and Capacity from Solar and Other Renewable Energy Facilities by an Electrical Utility as Allowed by South Carolina Code Section 58-41-20(E)(2) (See Directive Issued on November 25, 2019) | ) | **DIRECT TESTIMONY OF GEORGE V. BROWN ON BEHALF OF DUKE ENERGY CAROLINAS, LLC AND DUKE ENERGY PROGRESS, LLC** |

**Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

A. My name is George V. Brown. My business address is 400 South Tryon Street, Charlotte, North Carolina 28202.

**Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

A. I am General Manager of Strategy, Policy, and Strategic Investment in the Distributed Energy Technology group at Duke Energy Corporation.

**Q. PLEASE BRIEFLY SUMMARIZE YOUR EDUCATIONAL AND PROFESSIONAL EXPERIENCE.**

A. I received a Bachelor of Arts in Economics at Harvard College and a Masters in Business Administration at New York University. I have been employed by Duke Energy since 1998 in a variety of Finance and Strategy roles. In my current role, I am responsible for the development and execution of business strategy and policy support related to distributed energy technology for Duke Energy's retail franchised utilities, including Duke Energy Carolinas, LLC ("DEC") and Duke Energy Progress, LLC ("DEP" and, together with DEC, the "Companies" or "Duke Energy"). This includes participation in the legislative process for developing North Carolina House Bill 589 and the South Carolina Energy Freedom Act ("Act 62 or the "Act"), as well as implementation of programs resulting from those initiatives.

**Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA ("COMMISSION")?**

A. Yes. I have testified before the Commission on several occasions in the Companies' fuel cases, and in DEC's and DEP's avoided costs proceeding in Docket Nos. 2019-185-E and 2019-186-E. Most recently, I testified in the generic net energy metering proceeding in

Docket No. 2019-182-E, and in the currently pending DEC and DEP solar choice metering tariff proceedings in Docket Nos. 2020-264-E and 2020-265-E.

**Q. ARE YOU INCLUDING ANY EXHIBITS IN SUPPORT OF YOUR TESTIMONY?**

A. Yes. I am attaching North Carolina House Bill 589 (North Carolina General Statutes Section 62-110.8) as Brown Exhibit 1. I am also attaching the North Carolina Utilities Commission ("NCUC") Rule R8-71 as Brown Exhibit 2.

**Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

A. The purpose of my testimony is to provide information to the Commission on DEC's and DEP's experience with programs for the competitive procurement of renewable energy and various factors that should be evaluated when considering the creation of such a procurement program.

**Q. HOW IS YOUR TESTIMONY ORGANIZED?**

A. Section I of my testimony describes the background of the NC CPRE Program, and provides the Commission with information on how that program was developed, including the legislative and regulatory steps that were required. Section II of my testimony addresses factors that I think the Commission should consider in contemplating a procurement program for renewable energy.

## SECTION I

**Q. ARE DEC AND DEP ACTIVELY IMPLEMENTING A PROGRAM FOR THE COMPETITIVE PROCUREMENT OF RENEWABLE ENERGY AT THIS TIME?**

A. Yes. DEC and DEP are implementing the North Carolina Competitive Procurement of Renewable Energy Program ("NC CPRE Program"), which was established pursuant to Section II of Session Law 2017-192 (more generally known as NC House Bill 589 or "HB

589"). The NC CPRE Program is subject to oversight by the NCUC. There have been two tranches of such procurement that has sourced a total of 1,185 MW combined between DEC and DEP.

**Q. PLEASE PROVIDE THE COMMISSION SOME BACKGROUND ON HB 589 AND THE NC CPRE PROGRAM.**

A. In late 2016 and early 2017, Duke Energy participated in a broad stakeholder process that was overseen by North Carolina legislators to revamp that state's implementation of PURPA by incentivizing the development of new renewable energy through market-based procurement, as opposed to administratively established avoided cost rates. Stakeholders included industrial customer groups, the retailer's association, solar developers, the University of North Carolina system, the Electric Co-ops of North Carolina, the Municipal Utilities of North Carolina, the North Carolina Public Staff, North Carolina Commission Staff and Environmental Groups. After several months of discussions and negotiations between all the parties, HB 589 was passed by the North Carolina General Assembly and signed by Governor Roy Cooper in July 2017.

The intent was to transition the North Carolina renewable energy industry from relying on a traditional PURPA framework, which sources renewable energy from small renewable generators (less than 80 MW in capacity) at Commission-established avoided cost, to a competitive framework, where the price paid for the renewable energy is driven by the market to be below avoided cost.

**Q. WHY DID NORTH CAROLINA WANT TO MAKE THIS TRANSITION?**

A. There are several reasons why North Carolina wanted to make this change in its implementation of PURPA, but the biggest driver was a desire to protect customers from

overpayment for solar QF contracts based on administratively established fixed longer-term avoided cost rates. The PURPA framework from 2012 to 2017 resulted in contracts that cost approximately $1 billion more than the current forecast of avoided cost over the remaining term of the contracts by the time HB 589 was passed. This was due to high and stale avoided cost rates available under existing policy at a time that avoided costs were steadily decreasing. In an October 2017 Order, the NCUC characterized North Carolina's pre-existing PURPA policies as creating a "distorted marketplace" for solar development and recognized that the recent pace and level of QF development continuing unabated would pose serious risks of overpayment by utility ratepayers.[1]

**Q. HOW DID HB 589 ACCOMPLISH THIS TRANSITION?**

A. The new law sought to use market competition to drive solar investment rather than relying on administratively set avoided cost rates. There were two parts to this change. First, HB 589 shortened the maximum fixed rate term of most administratively set avoided cost contracts from 15 years to 5 years. Second, it provided 20-year competitively sourced fixed-rate contracts through the NC CPRE Program. In sum, HB 589 ensures a traditional PURPA option (at administratively-established rates) is still available to solar developers, but incentivizes new renewable development through the NC CPRE Program option by providing the opportunity for longer-term contracts that are more attractive to the solar industry.

[1] *Order Establishing Standard Rates and Contract Terms for Qualifying Facilities*, at 15-16, N.C.U.C. Docket No. E-100, Sub 148 (Oct. 11, 2017).

**Q. PLEASE DESCRIBE HOW THE NC CPRE PROGRAM DEVELOPED FROM HB 589 TO PROGRAM IMPLEMENTATION.**

A. HB 589 required Duke Energy to file a program with the NCUC for the competitive procurement of renewable energy. HB 589 outlined the key elements of the NC CPRE Program, including the total capacity to be procured, the term of contracts, the price cap on bidder's bid price, definitions for eligible resources, and guidelines for participation in the bidding process by DEC and DEP as well as their commercial affiliates over a 45-month period, which ends in November 2021.

As required by HB 589, the NCUC initially held a rulemaking proceeding to implement the NC CPRE Program statutory framework. After receiving proposed rules from the Companies and comments from other interested parties, the NCUC adopted Rule R8-71, the NC CPRE rule.[2] The NCUC also held a proceeding regarding selection of the Independent Administrator, which provided parties an opportunity to comment on the Companies' proposal of Accion Group, LLC to serve as the Independent Administrator.[3]

Rule R8-71 required the Companies to file an initial NC CPRE Program plan for NCUC approval (which was made in November 2017). In December 2017, the NCUC issued an order directing the Public Staff to review the plan and allowed for intervention by interested parties. In February 2018, the NCUC issued an order modifying and approving the initial CPRE Program plan for use in Tranche 1, the first NC CPRE request for proposals to procure renewable energy.

[2] *See Order Adopting and Amending Rules,* N.C.U.C Docket No. E-100, Sub 150 (Nov. 6, 2017).
[3] *See Order Approving Independent Administrator of the CPRE Program*, N.C.U.C. Docket No. E-100. Sub 151 (Jan. 9, 2018).

Tranche 1 opened in October 2018 in accordance with the approved NC CPRE Program plan.

**Q. WHAT IS THE CURRENT STATUS OF THE NC CPRE PROGRAM?**

A. To date, two solicitations have been completed. HB 589 established that the total amount to be procured through NC CPRE is to be adjusted depending on the amount of other uncontrolled renewable resources that are being added to the system outside of NC CPRE over the 45-month procurement period. Therefore, it remains to be determined by the NCUC whether an additional procurement will be needed based on total amount of other renewable resources outside of HB 589 programs.

**Q. ARE PROJECTS LOCATED IN SOUTH CAROLINA ELIGIBLE TO PARTICIPATE IN THE NC CPRE PROGRAM?**

A. Yes. South Carolina projects are eligible to bid into the NC CPRE Program procurements and compete for contracts if they can deliver the most value to the Companies and their customers at the least cost.

**Q. HOW MANY SOUTH CAROLINA PROJECTS HAVE EXECUTED CONTRACTS UNDER THE NC CPRE PROGRAM?**

A. Four projects totaling 132 MW have executed contracts; however, one of those projects decided not to move forward and terminated its contract.

## SECTION II

**Q. BASED ON THE COMPANIES' EXPERIENCE WITH THE NC CPRE PROGRAM, WHAT DO YOU BELIEVE ARE IMPORTANT FACTORS THAT SHOULD BE EVALUATED IN CONSIDERING A PROGRAM FOR THE COMPETITIVE PROCUREMENT OF RENEWABLE ENERGY?**

A. There are significant complexities in establishing programs for the competitive procurement of renewable energy. The creation of such programs is time consuming and requires a number of decisions to be made by the legislature or utility commission, as applicable, in order to establish, implement, and oversee such programs.

It should be noted that in HB 589, most of the key components of the NC CPRE Program were statutorily established through compromise legislation negotiated among stakeholders and approved by the legislature and not by the NCUC. Even then, it took approximately 7 months for the NCUC to receive stakeholder input, approve rules to administer the program, select the Independent Administer to administer the program, and approve the first solicitation.

I would also note that the NC CPRE Program is not the only framework for a competitive procurement of renewable energy program. Other states around the country have established competitive procurement programs for renewable energy utilizing a variety of different approaches, many of which could be evaluated for their best practices, as well. However, my testimony focuses on the NC CPRE Program, as I am most familiar with that program.

My testimony addresses each of the issues identified below, which I believe are important in considering a program for the procurement of renewable energy:

1. Purpose for the program;
2. Volume of renewable energy to be procured;
3. Timeline for the procurement;
4. Length of term for power purchase agreements ("PPAs");
5. Rate to be paid by customers, including whether a cost cap is used;
6. Geographic location of resources;
7. Cost responsibility for PPAs and program costs;
8. Utility operational control and economic curtailment of non-utility owned generation;
9. Utility ownership; and
10. Administration of program (third-party or utility administered).

Given that Act 62 does not provide any guidance on the structure or objectives of any potential competitive procurement program (other than authorizing the Commission to consider creating a competitive procurement program for renewable energy if it is in the public interest), this Commission will have to make a significant number of decisions on its own (or wait for further legislative guidance) if the Commission decides that it would be in the public interest to establish a competitive procurement program for renewable energy.

**Q. AS AN INTRODUCTORY MATTER, PLEASE EXPLAIN THE RELATIONSHIP AMONG PURPA, ACT 62, AND ANY POTENTIAL PROGRAM FOR THE PROCUREMENT OF RENEWABLE ENERGY.**

A. PURPA is a federal law that requires electric utilities, such as DEC and DEP, to offer to purchase electric energy from qualifying cogeneration and small power production

facilities, called Qualifying Facilities or "QFs."[4] This requirement to purchase a QF's energy is known as the "mandatory purchase obligation" under PURPA. PURPA requires that the rates electric utilities pay to purchase QF energy shall not exceed the electric utilities' "avoided costs," which PURPA defines as the incremental cost to the electric utility of the electric energy, which, but for the purchase from such QFs, such utility would generate or purchase from another source.[5] State utility commissions are responsible for implementing PURPA, consistent with FERC's regulations.[6]

Act 62, enacted in May 2019, specifically addresses South Carolina's implementation of PURPA. While the Commission has always had the exclusive authority and responsibility to oversee the State's implementation of PURPA in compliance with the regulations established by FERC, Act 62 sets forth additional details that the Commission must consider when addressing these issues. The amendments to South Carolina law setting forth the PURPA implementation can be found at S.C. Code Ann. § 58-41-20.

This proceeding arose from Section 58-41-20(E)(2), which gives the Commission authority to open a generic docket for the purpose of creating programs for the procurement of renewable energy if the Commission determines such action to be in the public interest. Given that the General Assembly included this permissive language within the section of Act 62 dedicated to PURPA implementation, it is probable that the General Assembly intended that any future competitive procurement program would be an extension of South Carolina's implementation of PURPA.

[4] *See* 16 U.S.C. § 824a-3(a).
[5] 16 U.S.C. § 824a-3(b), (d).
[6] *See* 16 U.S.C. § 824a-3(f); *see also FERC v. Mississippi*, 456 U.S. 742,750-51, 102 S.Ct. 2126 (1982).

**Q. PLEASE DESCRIBE WHY DETERMINING A PURPOSE FOR A RENEWABLE ENERGY PROCUREMENT PROGRAM IS IMPORTANT.**

A. Determining a clear purpose for a program is essential to ensuring its success and that the cost of the program borne by customers is justified by the benefits. An effective program can serve more than one purpose, but given the limitations of renewable energy, not all purposes listed below may be served, depending upon the electric system's specific needs.

Some potential purposes (not all necessarily applicable to DEC or DEP) are:

- To procure renewable energy to meet existing or future State or Federal renewable energy policy objectives or mandates (*i.e.*, compliance with a state renewable portfolio standard or a federal clean energy standard);
- To provide an alternative to traditional PURPA administratively established avoided cost rates for customers and QF developers;
- To meet required future generation needs due to load growth or other operational requirements (in order to do this, the production profile of the renewable resource must meet the energy production requirements of the power system);
- To diversify the utility's generation fleet; and/or
- To satisfy stakeholders who want more renewable energy.

**Q. DO YOU BELIEVE THAT PROGRAMS FOR THE COMPETITIVE PROCUREMENT OF RENEWABLE ENERGY ARE BENEFICIAL FOR CUSTOMERS?**

A. It depends on what benefit the program is trying to achieve. Customers will financially benefit when the price of the power purchased under the program is less than what

customers would otherwise pay for purchased power in the spot market or the fuel and variable operating costs of other generation at the time the energy is generated. However, at the time the contract is executed, it is impossible to know what the future spot price of fuel or purchased power will be and therefore, the benefit projected at the time of contract may or may not materialize. In fact, it is possible that the contract price will be greater than the spot price of power at any given time in the future, in which case customers would be paying a premium for the contracted power.

Procuring additional fixed-price renewable energy does benefit customers by reducing the reliance on the short-term power or fuel markets in that the price of the renewable energy will not change once the contract is executed. While this diversification benefit is real, the value of such a benefit is not easy to quantify.

**Q. PLEASE DESCRIBE THE PRIMARY FACTORS DRIVING THE COSTS TO CUSTOMERS ARISING FROM A PROGRAM TO PROCURE RENEWABLE ENERGY.**

A. The overall cost to customers of a renewable energy competitive procurement program is driven by the (1) the volume of energy and capacity procured; (2) the price of the purchases; and (3) the duration of the contract. The most straightforward way to control this cost responsibility is to put appropriate safeguards on these three factors.

**Q. DOES ACT 62 PROVIDE CLARITY ON HOW THE COST OF THE RENEWABLE ENERGY PROCURED WOULD BE PAID?**

A. No. It does not. The Commission must determine how the costs of the PPAs executed through the program would be recovered. If any future program was determined to be an extension of PURPA, the costs of the PPA could be recovered through the fuel statute as

"avoided costs under [PURPA]."[7] In addition, the Commission would need to determine how the costs to administer any program would be recovered (including potentially through fees collected from bidders).

**Q. HOW DID THE NC CPRE PROGRAM ADDRESS RECOVERY OF COSTS FOR NORTH CAROLINA CUSTOMERS?**

A. HB 589 established a separate rider for the utilities' recovery of energy and capacity costs for contracts executed under the NC CPRE Program. The cost of administering the program was largely recovered through fees paid for by bidders.

**Q. PLEASE DESCRIBE FURTHER THE ISSUE OF SETTING A "COST CAP" ON MARKET PARTICIPANTS' BID PRICE.**

A. Commissions often include a "cap" on the price that market participants can bid into a competitive procurement for renewable energy to ensure that any PPAs resulting from the program would be priced at or below the utility's avoided cost. This is appropriate given that the Commission's authority to set rates for utility purchases of wholesale power is limited to sales from QFs under PURPA. And, as it relates to South Carolina, this would ensure the costs incurred under the PPA by the utility are recoverable under the fuel clause, given the absence of any rider specific to recover such costs.

**Q. DOES EMPLOYING A "COST CAP" ON THE PROCUREMENT SET AT THE UTILITY'S AVOIDED COST ENSURE THAT CUSTOMERS WILL BENEFIT FROM THE PROGRAM?**

A. Unfortunately, no. Even if the PPA price is below a cost cap that is derived from forecasted avoided cost, it does not mean that the PPA will save customers money in the future. Even

[7] S.C. Code Ann. § 58-27-865(A)(2)(c).

energy procured below current projections of future avoided cost could be more expensive than the actual spot prices at the time the energy is delivered.

**Q. PLEASE EXPLAIN WHY THE VOLUME OF ENERGY AND CAPACITY TO BE PROCURED AND THE TIMING OF THAT PROCUREMENT IS IMPORTANT.**

A. The determination of the volume of the energy and capacity to be procured and the timeline of such procurement are some of the key considerations in establishing a program. Traditionally, when a utility issues a Request for Proposals ("RFP") for capacity and energy, the volume sought is based on an evaluation of the need for incremental energy on the system based on projections established in an integrated resource plan ("IRP"). Absent a showing of need, the volume of procurement could be established through consideration of variety of factors spelled out in state policy or law. Determining the volume of procurement should also involve an analysis of physical/technical considerations (such as the amount of renewable energy that can safely and reliably be integrated within a specified timeframe) and economic considerations (meaning, the amount of renewable energy that the marketplace has available at the lowest cost).

Physical/technical factors that need to be considered include:

- The amount and type of renewable energy that is currently in service and expected to come on-line over the next few years outside of the program under consideration.
- The efficiency of the interconnection process given the number of pending interconnection requests waiting to be studied and the length of time required to process interconnection requests and build required upgrades.

- The impact of increasing levels of renewable generation on the bulk power system and the resulting required investments that may be needed to ensure the power system's reliability.

Economic factors that need to be considered include:

- Ensuring the procurement volume and timeline fosters a very competitive process by ensuring the potential pool of bidders is sufficiently large relative to the volume and timing of the planned procurement.
- Whether other pre-existing programs in the targeted geographic area could limit the "pool" of potential RFP bids, and therefore work against the program's success. This could include other competitive procurement programs, PURPA, or customer programs for renewable energy (like the Companies' Green Source Advantage Programs).
- The quality of the renewable resource in the targeted geographic area and how economic and tax considerations factor into the cost of renewables.
- Likelihood of technological advances or cost declines in renewable generation in the coming years that would cause market prices to fall in the future relative to the prices that may be paid by customers in a more immediate procurement program.

**Q. HOW DID NORTH CAROLINA ADDRESS THESE ISSUES?**

A. The targeted procurement amount in North Carolina (2,660 MW) was established through legislative compromise and such targeted procurement amount was subject to adjustment based on the volume of other renewable energy added to the system. HB 589 provided substantial flexibility regarding how the targeted procurement amount was allocated

between the two Duke Energy utilities and the pacing of the procurement over the allotted time period (45-months).

**Q. PLEASE EXPLAIN WHY THE ISSUE OF CONTRACT LENGTH IS IMPORTANT.**

A. Generally speaking, the longer the contract length (for fixed price PPAs), the more the project can transfer its price risk to the utility's customers. In this case "price risk" means those scenarios where the spot power price is too low to enable the project owner to service its debt or pay its equity investors their targeted return. For example, assuming a project has a 30-year useful life, a 20-year fixed price contract will transfer two-thirds of the total project price risk to customers while a 10-year contract will transfer one-third of the total price risk.

While this risk transfer may not seem optimal for customers, the 20-year term contract may enable the project owner to offer a lower price (a greater decrement to the applicable avoided cost) than a 10-year contract would allow because the project with a 20-year term has less risk. There could be some benefit for customers which may partially offset their increased risk.

**Q. PLEASE DESCRIBE THE ISSUE OF GEOGRAPHIC LOCATION AND WHY THIS IS IMPORTANT.**

A. An additional issue that requires consideration by the Commission is how to determine the targeted location of competitive procurement within a utility's "Balancing Authority Area." Act 62 states that the Commission may consider competitive procurement programs for utilities within each utility's "Balancing Authority Area" ("BAA"). Very generally speaking, a BAA is a defined geographic area, as determined by NERC, over which a

designated Balancing Authority is responsible for ensuring reliability. DEC is one BAA, comprised primarily of its service territory in South Carolina and North Carolina. DEP is also one BAA, comprised primarily of its service territory in South Carolina and North Carolina. For reference, in South Carolina, the other two BAAs are comprised of Dominion Energy South Carolina's territory and Santee Cooper's territory. In interpreting Act 62, the Commission could consider a program that procures renewable energy in a portion of a utility's BAA (for example, the South Carolina service territory portion of DEC or DEP) or across the entire BAA. I would note that this distinction does not matter for DESC given that its BAA is located entirely within the boundaries of the State.

On the topic of geographic location of procurement, I would also mention that it can be helpful for utilities to provide "locational guidance" to assist potential bidders in understanding the available transmission capability and selecting viable points of interconnection. Because each utility has a unique generation mix, load profile and grid network, providing locational guidance can be helpful to communicate geographical areas of the system where it is known that projects will face extended timelines to interconnect or higher costs associated with interconnection based on network upgrades.

**Q. PLEASE EXPLAIN HOW THE NC CPRE PROGRAM ADDRESSED THIS ISSUE.**

A. HB 589 allowed DEC and DEP flexibility (subject to NCUC oversight) to select the location for the procurement as long as it is within each utility's respective BAA. Duke Energy chose to extend the RFP to projects located in the entire BAA of each utility to maximize the number of eligible projects and thereby lower the cost for customers. The Companies have also created locational guidance documents that the Independent

Administrator makes available to potential bidders, which are available on the Independent Administrator's website and provided during stakeholder sessions.

**Q. PLEASE EXPLAIN THE ISSUE OF UTILITY CONTROL OF GENERATION OUTPUT.**

A. The Commission must also determine whether PPAs sourced through competitive procurement should include provisions for economic curtailment of generation output and under what circumstances (if any) compensation should be paid due to such curtailment. Economic curtailment occurs when the utility chooses to ramp down a generator because cheaper resource options are available to meet load during that time period. Economic curtailment enables the utility to save customers money by not purchasing a particular generator's output when it is not economic to do so.

In order to limit the adverse financial impact on the generator from curtailment of its production by the utility, there is generally an annual limit in terms of how much energy can be curtailed. This enables the developer to factor that potential loss of revenue into its bid price.

For reference, in NC CPRE, DEC CPRE facilities may be economically curtailed with no compensation for up to 5% of the facility's expected annual output and DEP CPRE facilities are capped at 10% of their expected annual output.

**Q. PLEASE DESCRIBE THE ISSUE OF UTILITY OWNERSHIP OF FACILITIES UNDER A COMPETITIVE PROCUREMENT PROGRAM.**

A. This issue is approached in very different ways in different jurisdictions. In some cases, no limitations are placed on utility ownership or participation. In other cases, a certain portion of the projects procured are acquired by the utility through an RFP in which third-

parties bid projects for purchase by the utility and a separate RFP in which developers retain the ownership of projects and sell the output. It is also possible that the utility will neither compete with third parties nor purchase assets from third parties; in that case, the RFP would only target developers who retain ownership and sell the output to the utility. Under this approach, the utility would typically not participate as a bidder or acquire any assets.

In the case of NC CPRE, a limitation was placed on the percentage of program megawatts that could be self -developed by the utilities (or their affiliates) but no limit was placed on the number of projects that could be acquired by the utilities from third parties through the RFP.

**Q. PLEASE DESCRIBE VARIOUS OPTIONS OF ENTITIES TO ADMINISTER A COMPETITIVE PROCUREMENT OF RENEWABLE ENERGY PROGRAM.**

A. There are three general options. First, the utility can administer the program, as DEC and DEP administered the procurement under SC Act 236 for new utility-scale solar resources. Second, the utility can administer the program but with third-party "evaluation" after the procurement is completed or "oversight" during the procurement. Third, the program can be fully administered by a third party. NC CPRE was fully administered by a third party, but this arrangement may not be appropriate in some cases or necessary where the utility is not competing directly with non-utility bidders.

**Q. PLEASE EXPLAIN HOW THE INTERCONNECTION PROCESS INTERRELATES WITH A RENEWABLE ENERGY PROCUREMENT PROGRAM.**

A. Interconnection is a critical piece of the procurement process for two reasons: (1) timing and (2) cost. For new renewable generation to be built, it must enter into an Interconnection Agreement with the interconnecting utility enabling the generator to deliver power to the grid. Ensuring that bidders have sufficiently progressed through the interconnection process (or have a well-defined path through interconnection) is important to ensuring that, if a bidder is awarded a contract, then the facility has a viable path to becoming commercially operational. Depending upon the interconnection procedures that are in place, modifications may be required in order to establish a more coordinated and efficient evaluation of projects that submit bids into the RFP.

Even with the proper interconnection evaluation process in place, it is important to consider the amount of time it takes to conduct the required studies and the time required to construct the upgrades necessary to connect the project. All of this impacts the timing of the procurement, as discussed earlier in my testimony.

With regard to the Companies' efforts to transition the interconnection study process from a serial study process to a cluster study process (known as "Queue Reform"), the revisions to the SC Generator Interconnection Procedures, approved by the Commission in its directive issued February 10, 2021 in Docket No. 2019-326-E, establish interconnection processes that support the collective evaluation of bids from a competitive procurement program, like the NC CPRE Program.

**Q. WHAT IS THE RELATIONSHIP BETWEEN THE IRP AND COMPETITIVE PROCUREMENT OF RENEWABLE ENERGY?**

A. The IRP is a planning document developed by the utility to inform the Commission and other stakeholders of the utility's plans to meet the projected capacity and energy needs of the utility's customers over the forecasted period. The IRP is developed by modeling the power system over the forecast horizon and identifying a mix of existing and new generation resources that most economically meet the needs of the system while maintaining adequate resources to meet peak demand needs of the customers served by the utility. The IRP also analyzes how the portfolio can change based upon different energy policy frameworks, such as targeted resource retirements or a more aggressive carbon dioxide reduction scenario.

Competitive procurement of renewable energy is a market driven process to acquire new renewable resources. If the renewable resource is available at times of system peak demand it can replace the need for other new resources on the system as identified in the IRP. Alternatively, as is generally the case today, most renewable resources such as solar (when not coupled with storage) provide energy but very little capacity. This allows the existing generation fleet to run less during certain hours of the year, but it does not avoid the need for new resources identified in the IRP to meet peak demand needs. In this case the IRP can select the renewable resource as a potential economic source of energy without changing the total amount of resource required to meet peak demand.

It is very important to have a clear understanding of the assumptions underlying the IRP and its scenarios before relying on the IRP to justify a competitive procurement of renewable energy. For example, in a high price carbon dioxide scenario, the IRP will select

renewable energy because it is carbon dioxide free energy that can economically meet the needs of that specific scenario. However, if that compliance obligation does not yet exist, using the IRP scenario to justify the procurement could prematurely lead to higher costs for customers than is necessary today.

The 2,660 MW procurement target in HB 589 was a legislative mandate. As a result, the IRP was not the reason the new renewable resources are procured, but the IRP must include the likely outcomes of the NC CPRE Program to ensure it is as accurate in forecasting the future system as possible. Therefore, the IRP added those mandated renewable resources to the other solar generation that was forecast to materialize from sources such as PURPA, Act 236 and Green Source Advantage.

**Q. DO YOU HAVE ANY OTHER COMMENTS FOR THE COMMISSION?**

A. Yes. I would also like to mention that given the nature of this generic proceeding and the number of topics that the Commission requested the parties address, my testimony provides a very high-level explanation of these issues. These issues are complex and will require significantly more attention in the event the Commission decides to explore this concept further. Also, there are a number of issues that I have not raised, such as: the role of the Commission in creating the rules for a program, whether pro forma contracts would be developed, the development of the methodology used to evaluate proposals (and the timing of when such methodology should be published), the interaction between any potential third-party administratorr and the utility, and many others. Finally, I would note that consideration and development of such a program raises a number of legal issues, which my testimony does not address, such as the impact of FERC Order No. 872, (FERC's recent order on PURPA implementation, where FERC addresses for the first time the manner in

which utilities may use competitive procurements in a PURPA framework). The Companies look forward to providing additional information on any of these topics in future proceedings, as requested.

**Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

A. Yes.